

# Evaluation of Spinal Disorders

## Classification of Nerve Injury

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There are many nerve fibers within the spinal nerve root. They vary in size and diameter. Some represent sensory nerves whereas others are motor or autonomic nerves. The nerve fibers susceptibility to compression varies depending on size, internal architecture of the nerve, and the myelin status. There are three primary classifications of peripheral nerve injury.

**Neuropraxia** refers to conduction block, in which the nerve fiber conductivity is preserved and there is no structural degenerative change of the nerve fiber. The conduction over the compressed segment of nerve generally recovers after a few weeks or months. This type of lesion usually occurs secondary to reversible local compromise of the fatty lining around the nerve or myelin damage.

**Axonotmesis** refers to a loss of conductivity in the nerve fiber axons, but with surrounding endoneurial tube remaining intact. This type of lesion usually occurs secondary to compression and traction injury severe enough to interrupt the actual physical conductivity of the nerve cells.

**Neurotmesis** refers to the loss of conductivity across axons as well as other elements of the nerve trunk including the endoneurial tube and special linings around nerve root. This term is usually used to a nerve that has been completely severed and disorganized by the scar tissue. Spontaneous recovery does not typically occur.